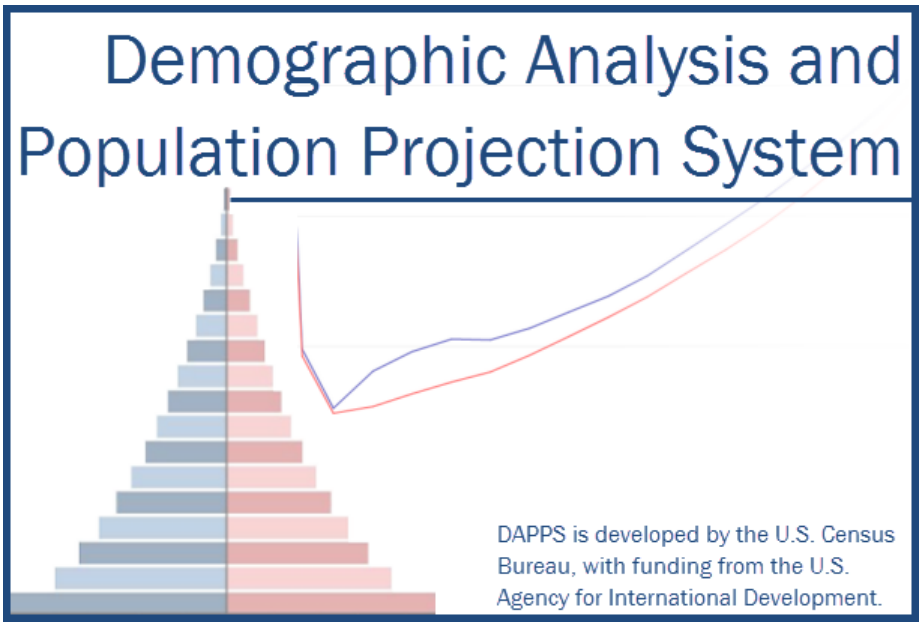


Welcome to the Demographic Analysis and Population Projection System, also known as DAPPS. This product is a tool designed to help users produce and analyze population projections with ease.

In order to create a population projection, DAPPS requires at least three components:

1) A base population, by age and sex (usually based on a census or estimates);
2) A mortality structure, by age and sex (usually a life table or deaths, by age and sex); and
3) A fertility structure, by age of mother (births or age-specific fertility rates).

Since populations usually experience inflows and outflows of people, a fourth component is optional but recommended:

4) A pattern of net migration (by age and sex of migrant).[1]

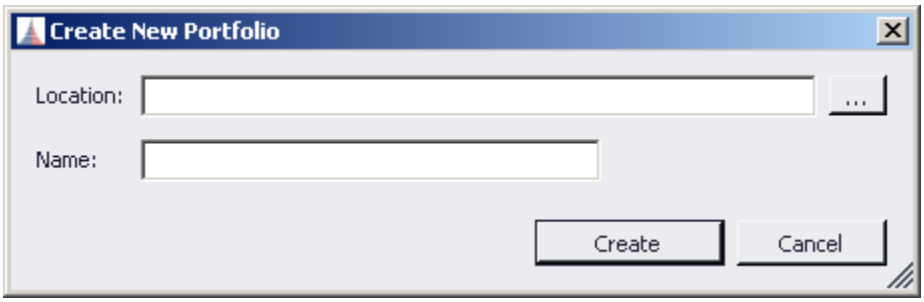
The data for these components can come from one of two places:

1) A RUP input file[2] or,
2) A spreadsheet-based program, like Microsoft Excel or MortPak for Windows.

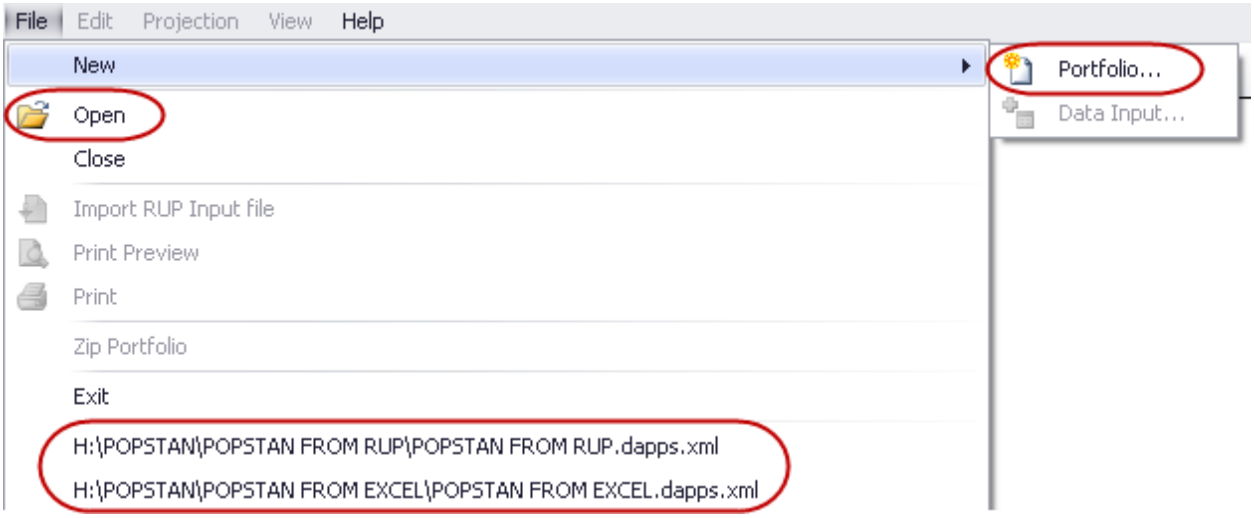
[1] A projection can be completed if there is no migration pattern present. The program will assume that net migration is equal to zero every year.
[2] For more information on how to construct a RUP input file, see RUP User's Guide.

To generate a population projection, you first need to create a new portfolio or open an existing one.

To create a new portfolio, select **New** then **Portfolio…** from the **File** menu, and create a new portfolio on your machine by indicating the **Location** where you want to store it and the **Name** you want to call it.

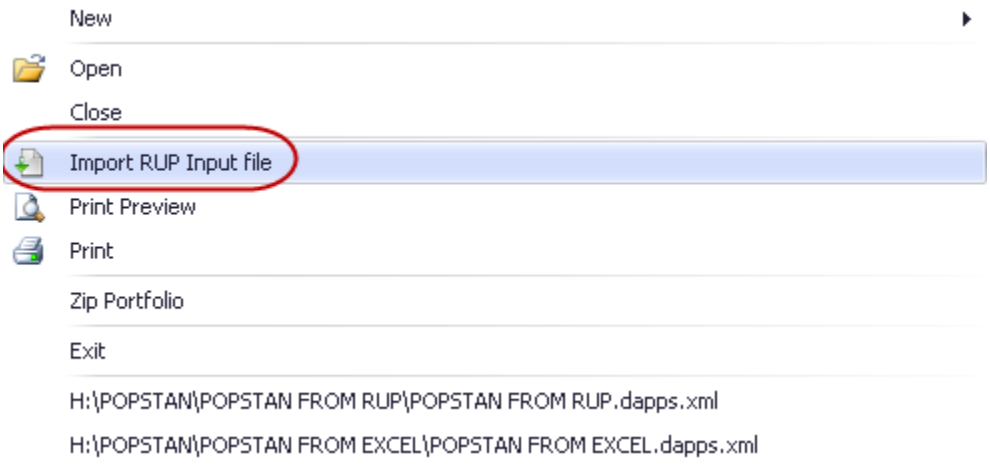


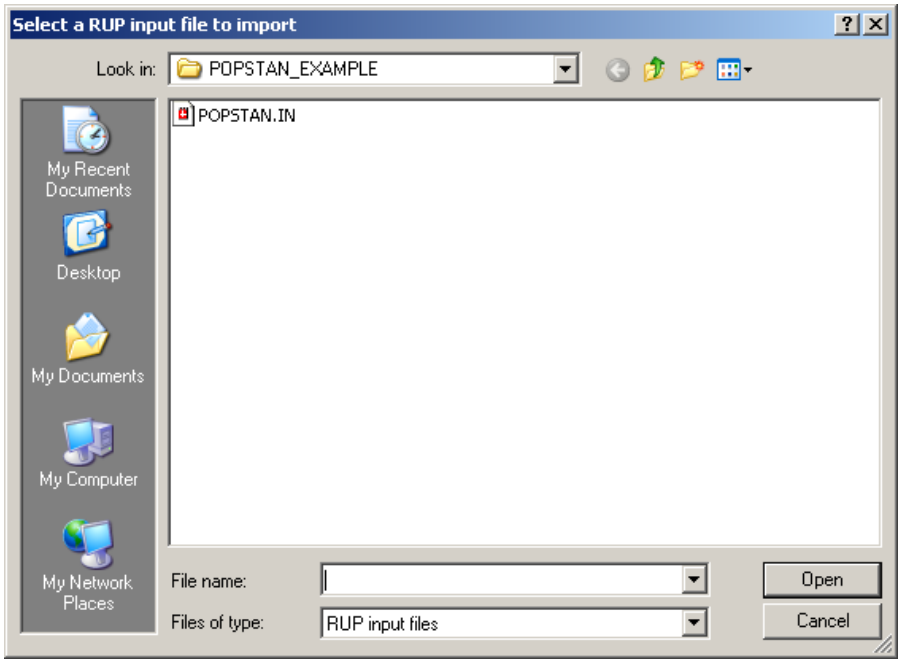
To open an existing portfolio, select **Open** from the **File** menu and navigate to **Portfolio**, or select one of your recently created portfolios from the bottom of the **File** menu.



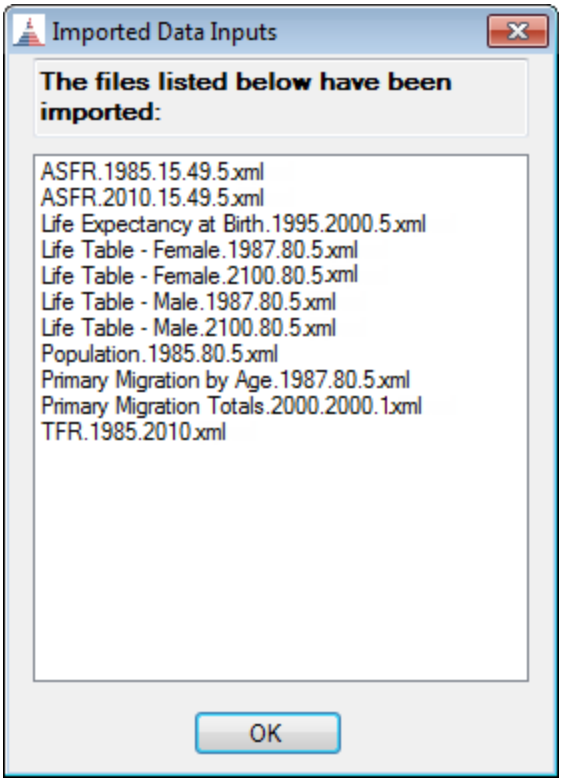
Once you have opened or created a portfolio, you can add your component data.

If you have a RUP input file you are converting to DAPPS, select **Import RUP Input File** from the File menu, navigate to the input file you would like to import, and press **Open** to import all of the components from the RUP input file into your portfolio.

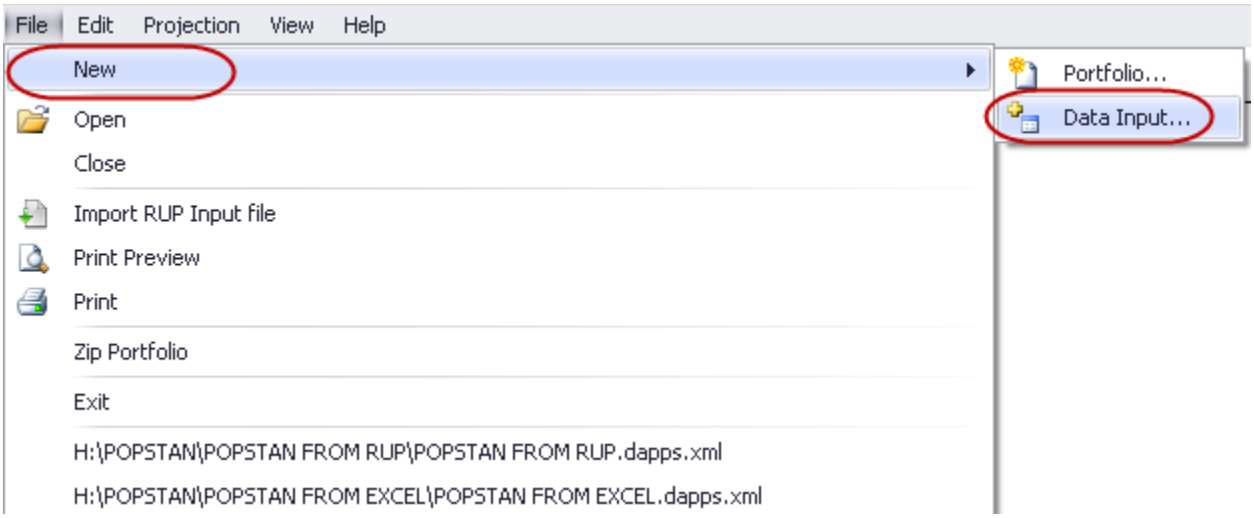




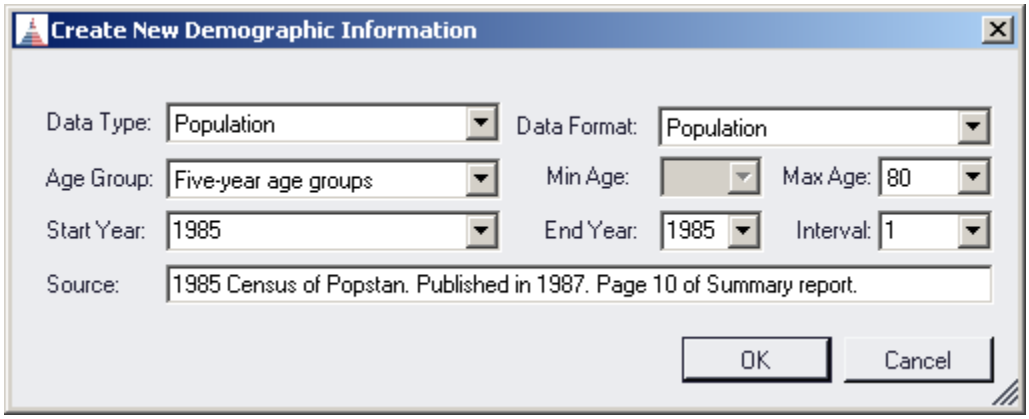
Once imported, a dialog box will appear to tell you what was imported from the file. If one or more data components were not imported, please check your input file for formatting errors and try again.



If you are copying data from a spreadsheet, select **New** then **Data input…** from the **File** menu (or click on the  toolbar icon) to add a new data component.



Select your **Data Type**, **Data Format**, **Age Group**, **Max Age**, **Start Year**, **End Year**, **Interval**, and **Source**[3] based on the parameters of your component data.[4] For example, if you want to use a population age-sex distribution (for 1985, by five-year age groups, until age 80+), select the requisite items in the wizard, then click **OK** to create a blank data input shell.



[3] You will not be able to proceed unless all of these items have been entered.

[4] For example, if the data you would like to import from your spreadsheet are one population age-sex distribution from 1985 by five-year age groups to 80+ from Popstan's census volume published in 1987, you would select or type "Population," "Population," "Five-year age groups," "80," "1985," "1985" (which would be automatically selected because it is linked to Start Year), "1," and "1985 Census of Popstan. Published in 1987. Page 10 of Summary report."

Population by Age and Sex			
	Midyear population		
Age	Both sexes	Male	Female
All ages	10,715,302	6,012,966	4,702,336
0-4	1,390,000	710,000	680,000
5-9	1,201,500	601,552	599,948
10-14	1,056,706	531,057	525,649
15-19	1,089,985	613,793	476,192
20-24	1,159,947	703,468	456,479
25-29	1,067,926	654,624	413,302
30-34	875,358	531,398	343,960
35-39	695,354	416,520	278,834
40-44	553,724	328,363	225,361
45-49	457,630	270,353	187,277
50-54	359,908	213,639	146,269
55-59	274,485	166,875	107,610
60-64	195,279	121,324	73,955
65-69	180,000	80,000	100,000
70-74	90,000	40,000	50,000
75-79	45,000	20,000	25,000
80+	22,500	10,000	12,500
0	298,000	152,000	146,000
1-4	1,092,000	558,000	534,000

From your source spreadsheet (left), highlight the data you want to bring into DAPPS, and copy them. Paste the data from your spreadsheet into the blank input shell (below) to complete your data input (see below left). Save the data by selecting **Save** from the **Edit** menu, or by clicking the  icon on the toolbar.

Repeat this process for any and all inputs you may have.

Population 1985 Ages 0 to 80 (5-Year)			
Age	Male	Female	Total
0 - 4	710,000	680,000	1,390,000
5 - 9	601,552	599,948	1,201,500
10 - 14	531,057	525,649	1,056,706
15 - 19	613,793	476,192	1,089,985
20 - 24	703,468	456,479	1,159,947
25 - 29	654,624	413,302	1,067,926
30 - 34	531,398	343,960	875,358
35 - 39	416,520	278,834	695,354
40 - 44	328,363	225,361	553,724
45 - 49	270,353	187,277	457,630
50 - 54	213,639	146,269	359,908
55 - 59	166,875	107,610	274,485
60 - 64	121,324	73,955	195,279
65 - 69	80,000	100,000	180,000
70 - 74	40,000	50,000	90,000
75 - 79	20,000	25,000	45,000
80+	10,000	12,500	22,500
Total	6,012,966	4,702,336	10,715,302

Source: 1985 Census of Popstan. Published in 1987. Page 10 of Summary report.

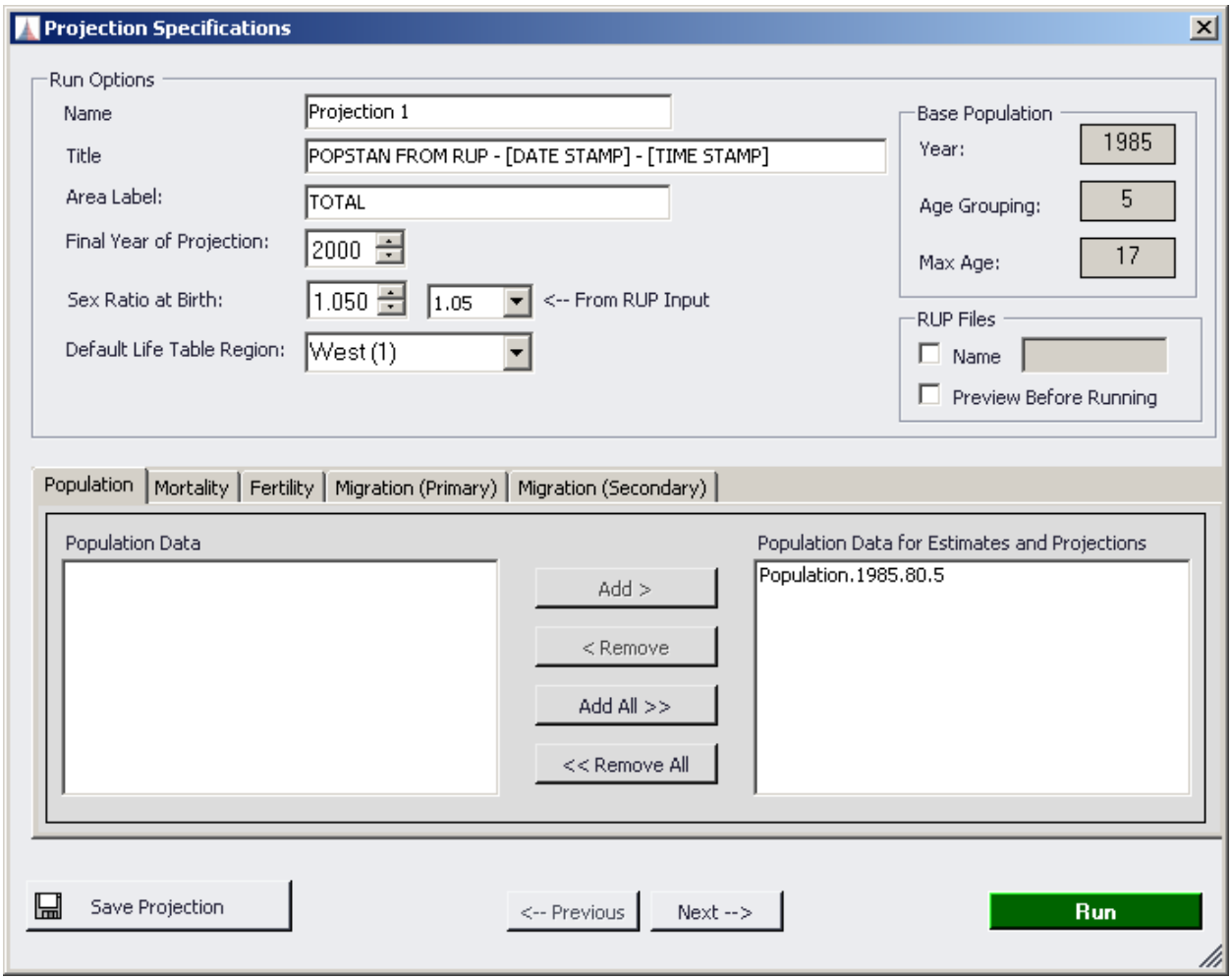
Population 1985 Ages 0 to 80 (5-Year)			
Age	Male	Female	Total
0 - 4	0	0	0
5 - 9	0	0	0
10 - 14	0	0	0
15 - 19	0	0	0
20 - 24	0	0	0
25 - 29	0	0	0
30 - 34	0	0	0
35 - 39	0	0	0
40 - 44	0	0	0
45 - 49	0	0	0
50 - 54	0	0	0
55 - 59	0	0	0
60 - 64	0	0	0
65 - 69	0	0	0
70 - 74	0	0	0
75 - 79	0	0	0
80+	0	0	0
Total	0	0	0

Source: 1985 Census of Popstan. Published in 1987. Page 10 of Summary report.

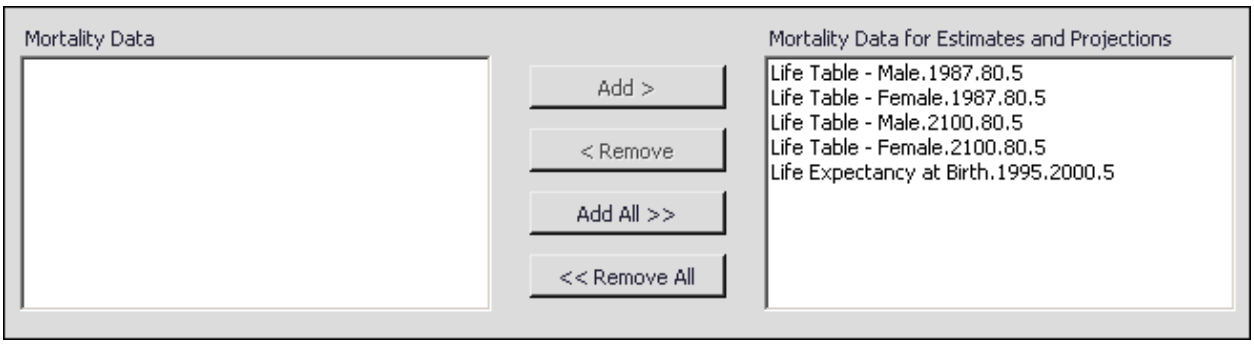
Once you have entered population, fertility, mortality, and migration into DAPPS, you are now ready to create a projection.

To start preparation of the projection, select **Create Projection** from the **Projection** menu in the toolbar. Enter the projection specifications, and add (**Add >**) any or all (**Add All >>**) of the components that will go into your projection.

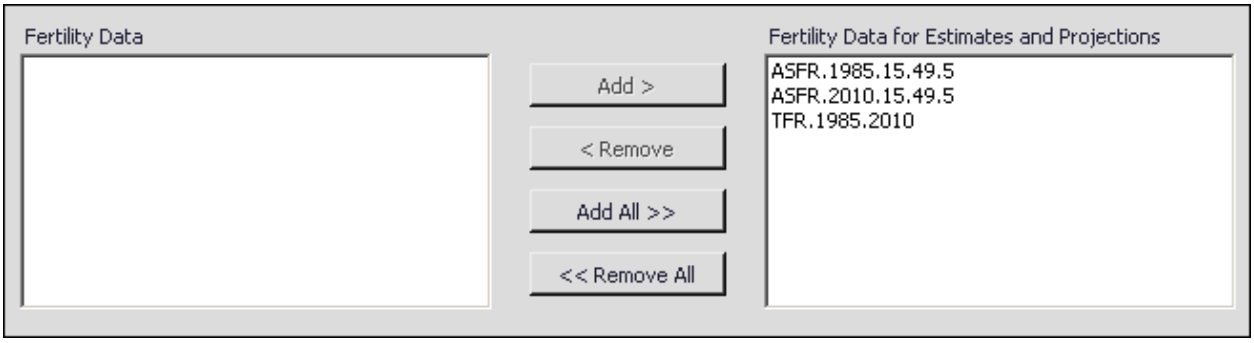
The first tab will show you available **Population Data** inputs. Choose only one.



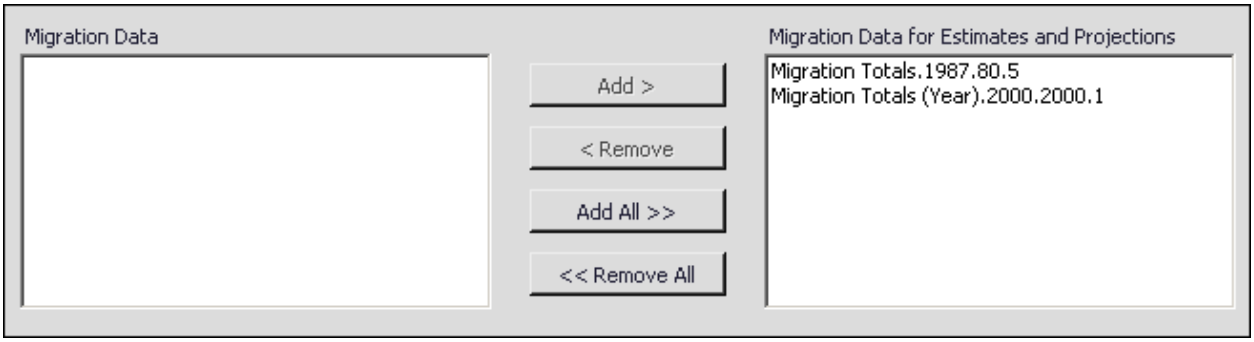
Click **Next** to move to the **Mortality Data** inputs. Select the desired inputs, ensuring at least one life table is selected for males and females (in the same year).



Click **Next** to move **to Fertility Data** inputs. Select the desired inputs, ensuring at least one age pattern of fertility (either ASFR or births by age of mother).



Click **Next** to move to the primary stream of **Migration Data** inputs. Select the desired inputs, this time ensuring at least one age pattern of migration. Note that migrants and migration rates cannot be selected together.

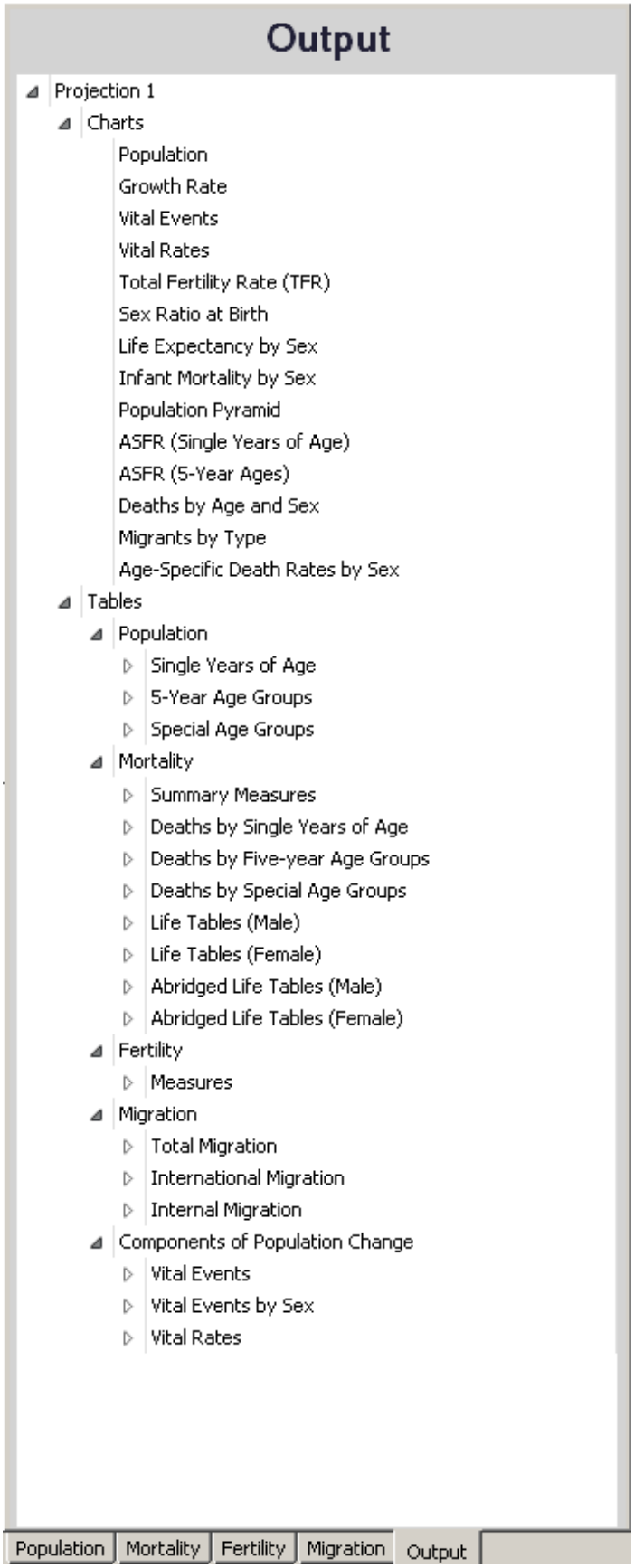


Clicking **Next** again will take you to the secondary stream of migration. The same rules apply for the secondary stream of migration as they did for the primary stream. If you selected migrants in the primary stream, then you may select migration rates in the secondary stream, or vice versa.

If the secondary stream of migration is used, you must edit the **Area Label** text from **TOTAL** to something descriptive about the secondary stream.

Neither stream of migration is required to run the projection. If no migration is included, DAPPS and RUP will assume the net migration of the population is equal to zero.

Once all of the fields have been entered and your components have been chosen, click **Run** to create your projection.



Once your projection has run, you will automatically be redirected to the **Output** tab, and you can analyze projected output tables, static charts, and dynamic charts.

The **Output** tab is organized by projection. If you create more than one projection, the contents of all but the most recent will be collapsed.

Under each **Projection**, the results are divided into **Charts** and **Tables**.

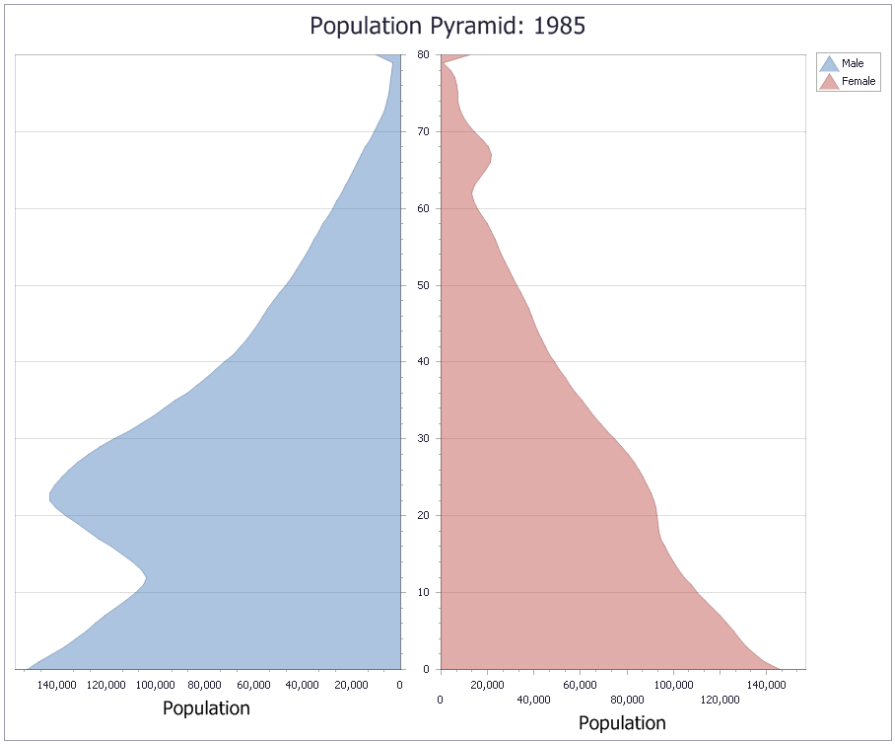
Charts consist of both static and dynamic charts. **Population**, **Growth Rate**, **Vital Events**, **Vital Rates**, **Total Fertility Rate (TFR)**, **Sex Ratio at Birth**, **Life Expectancy by Sex**, and **Infant Mortality by Sex** are all static charts. **Population Pyramid**, both **ASFR** charts, **Deaths by Age and Sex**, **Migrants by Type**, and **Age-Specific Death Rates by Sex** are all charts that can be viewed dynamically by year.

The **Tables** are split by component type (**Population**, **Mortality**, **Fertility**, and **Migration**), and summary measures of each component are available in the composite tables under **Components of Population Change**. Each table is available to view by year.

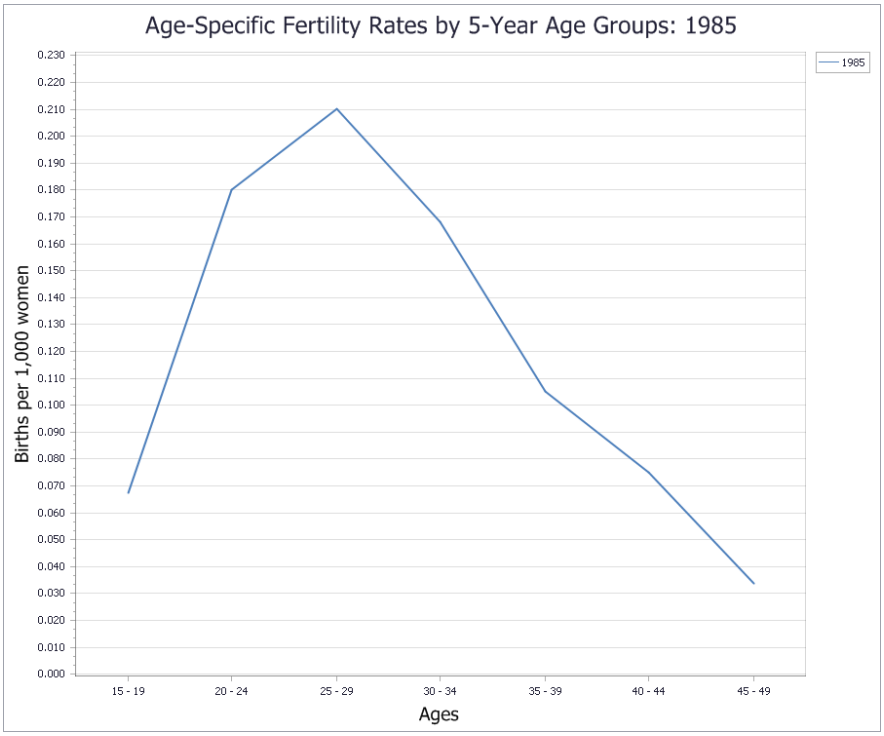
Any of the tabular data can be copied and pasted into Microsoft Excel or exported as table-based file types. Any of the charts can be saved as PDF or image files by right-clicking.

The following images are examples of **Output** charts and tables.

This **Population Pyramid** for 1985 provides one year in a dynamic chart of the multi-year projection output.



Similarly, the following **ASFR** chart for 1985 is for one year in a dynamic chart of the multi-year projection output.



This table displays the population distribution in 5-year age groups for the year 2000.

5-Year Age Groups (2000)							
	Population			Percent			
Age	Total	Male	Female	Total	Male	Female	Sex Ratio
0 - 4	1,091,428	549,520	541,908	9.19	8.13	10.59	101.40
5 - 9	1,107,121	557,977	549,144	9.32	8.26	10.73	101.61
10 - 14	1,088,581	555,619	532,962	9.17	8.22	10.42	104.25
15 - 19	1,002,033	519,459	482,574	8.44	7.69	9.43	107.64
20 - 24	919,064	491,305	427,759	7.74	7.27	8.36	114.86
25 - 29	961,027	563,884	397,143	8.09	8.34	7.76	141.99
30 - 34	1,107,596	714,158	393,438	9.33	10.57	7.69	181.52
35 - 39	1,103,681	713,646	390,035	9.29	10.56	7.62	182.97
40 - 44	921,528	573,890	347,638	7.76	8.49	6.80	165.08
45 - 49	727,270	439,553	287,717	6.12	6.50	5.62	152.77
50 - 54	559,074	329,688	229,386	4.71	4.88	4.48	143.73
55 - 59	425,047	247,856	177,191	3.58	3.67	3.46	139.88
60 - 64	331,874	195,057	136,817	2.79	2.89	2.67	142.57
65 - 69	233,028	140,450	92,578	1.96	2.08	1.81	151.71
70 - 74	149,125	92,481	56,644	1.26	1.37	1.11	163.27
75 - 79	80,705	49,237	31,468	.68	.73	.62	156.47
80+	65,979	24,394	41,585	.56	.36	.81	58.66
Total	11,874,161	6,758,174	5,115,987				

This table displays **Summary Measures of Mortality** for each year in the projection.

Summary Measures of Mortality									
	Life Expectancy at Birth			Infant Mortality Rate			Infant Deaths		
Year	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
1985	65.34	64.46	66.25	65.69	69.22	61.98	20,604	11,105	9,499
1986	65.34	64.46	66.25	65.69	69.22	61.98	19,987	10,792	9,195
1987	65.34	64.46	66.25	65.69	69.22	61.98	19,608	10,587	9,021
1988	65.30	64.17	66.48	66.15	71.37	60.66	19,348	10,702	8,646
1989	65.26	63.88	66.70	66.66	73.59	59.38	19,078	10,796	8,282
1990	65.21	63.58	66.92	67.21	75.87	58.12	18,812	10,885	7,927
1991	65.16	63.27	67.14	67.81	78.21	56.88	18,550	10,967	7,583
1992	65.11	62.96	67.36	68.45	80.63	55.67	18,288	11,040	7,248
1993	65.05	62.65	67.58	69.15	83.11	54.48	18,026	11,104	6,922
1994	64.99	62.33	67.79	69.89	85.67	53.32	17,768	11,161	6,607
1995	64.93	62.00	68.00	70.68	88.30	52.19	17,518	11,215	6,303
1996	65.34	62.42	68.42	67.89	84.94	49.98	16,461	10,547	5,914
1997	65.75	62.83	68.82	65.20	81.69	47.87	15,575	9,995	5,580
1998	66.15	63.23	69.22	62.61	78.57	45.85	14,746	9,477	5,269
1999	66.54	63.62	69.62	60.12	75.56	43.91	13,971	8,992	4,979
2000	66.93	64.00	70.00	57.72	72.66	42.04	13,250	8,541	4,709

The first table below displays age-specific and total fertility rates for each year in the projection, while the second table displays the **Vital Rates** for each year in the projection.

	Fertility Measures							
	Year	15-19	20-24	25-29	30-34	35-39	40-44	45-49	TFR
▸	1985	0.0676	0.1802	0.2102	0.1682	0.1051	0.0751	0.0338	4.20
	1986	0.0651	0.1758	0.2060	0.1650	0.1025	0.0730	0.0328	4.10
	1987	0.0626	0.1713	0.2017	0.1619	0.0998	0.0708	0.0318	4.00
	1988	0.0601	0.1669	0.1975	0.1587	0.0972	0.0687	0.0308	3.90
	1989	0.0576	0.1625	0.1933	0.1556	0.0946	0.0666	0.0298	3.80
	1990	0.0551	0.1581	0.1891	0.1525	0.0919	0.0645	0.0288	3.70
	1991	0.0526	0.1537	0.1848	0.1493	0.0893	0.0624	0.0278	3.60
	1992	0.0501	0.1493	0.1806	0.1462	0.0867	0.0603	0.0268	3.50
	1993	0.0476	0.1449	0.1764	0.1431	0.0840	0.0582	0.0258	3.40
	1994	0.0451	0.1405	0.1722	0.1399	0.0814	0.0561	0.0248	3.30
	1995	0.0426	0.1361	0.1679	0.1368	0.0788	0.0540	0.0238	3.20
	1996	0.0410	0.1331	0.1651	0.1347	0.0770	0.0525	0.0231	3.13
	1997	0.0393	0.1301	0.1622	0.1325	0.0752	0.0511	0.0224	3.06
	1998	0.0376	0.1271	0.1593	0.1304	0.0734	0.0497	0.0217	3.00
	1999	0.0359	0.1241	0.1565	0.1283	0.0716	0.0482	0.0210	2.93
	2000	0.0342	0.1211	0.1536	0.1261	0.0698	0.0468	0.0204	2.86

	Vital Rates							
		Per 1000 Pop.			Migration Rate (per 1000 Pop.)			%
	Year	CBR	CDR	RNI	Total	Internal	International	Growth Rate
▸	1985	29.09	6.44	22.65	-18.31	.00	-18.31	.43
	1986	28.45	6.46	22.00	-18.24	.00	-18.24	.38
	1987	27.78	6.52	21.26	-18.17	.00	-18.17	.31
	1988	27.08	6.61	20.47	-16.72	.00	-16.72	.38
	1989	26.36	6.70	19.66	-15.26	.00	-15.26	.44
	1990	25.62	6.79	18.84	-13.81	.00	-13.81	.50
	1991	24.88	6.88	18.00	-12.36	.00	-12.36	.56
	1992	24.12	6.97	17.14	-10.93	.00	-10.93	.62
	1993	23.35	7.07	16.27	-9.50	.00	-9.50	.68
	1994	22.58	7.17	15.41	-8.08	.00	-8.08	.73
	1995	21.82	7.27	14.55	-6.69	.00	-6.69	.79
	1996	21.28	7.18	14.09	-5.30	.00	-5.30	.88
	1997	20.74	7.11	13.63	-3.94	.00	-3.94	.97
	1998	20.22	7.04	13.18	-2.60	.00	-2.60	1.06
	1999	19.72	6.98	12.74	-1.29	.00	-1.29	1.15
	2000	19.23	6.92	12.31	.00	.00	.00	1.23